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MINERALS PROGRAM
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DIVISION OF
OIL, GAS & MINING

May 3, 1989

Mr. R.J. Ramsey
Barney's Canyon Mine
P.O. Box 311
Bingham Canyon, Utah 84006-0311

Re: B.P. Minerals
Barney's Canyon Project
Clay Liner

Dear Mr. Ramsey:

The Bureau of Water Pollution Control (The Bureau) has reviewed the information presented in your 25 April letter. The Bureau has serious concerns about the clay material placed in the process ponds and the clay material in general based on the following:

- a. Inability to establish a reasonably representative composition of the clay "liner" material that is in place without seriously compromising its integrity.
- b. Permeability tests being run on 3/4-inch minus material being presented as representative of in place material containing particles as large as 5 inches.
- c. Although gradation results do not show any particles larger than 3 inches we do have uncertainty about the ability of clay material with 3, 4 and 5 inch size material constructed in a 6-inch lift to meet the permeability requirements as was observed in the process ponds. General practice of allowing a particle size 2/3 of the lift thickness for clay liner is a rule-of-thumb; not a standard.

Considering these concerns, the Bureau will accept the clay material which has been placed in the process ponds to be used as a leak detection base (not as a clay liner) based on the following conditions:

- a. All rock 1 1/2 inches and larger in size will be removed from the process pond clay surface; resulting holes will be filled with clay and properly compacted.
- b. Finished process pond clay surfaces will be smooth i.e. providing no barriers to the flow of leakage.

- c. As stated in the Bureau's letter dated 13 September 1988 addressed to Mr. Gerald Schurtz "We understand . . . that the maximum time it will take to empty a process pond once a leak has been detected is seven (7) days." In addition, it must be understood that the process pond shall not be placed back into service until the leak has been repaired to prevent flow of process fluids through the liner. This condition shall be stated in the spill prevention, control and counter measures plan.
- d. All sampling and gradation holes dug in the process pond clay material shall be plugged utilizing a procedure which has been reviewed by the Bureau.

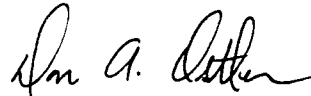
The Bureau will approve an amendment to the approved specifications for the clay material on site to be used in the construction of clay liners for the Barney's Canyon project subject to the following conditions:

- a. A specification for the gradation of the material to be placed must be submitted for review prior to its use.
- b. Any particle greater than a 3-inch size shall be removed during compaction with a sheepsfoot type roller. This will require personnel on site to insure that 3-inch plus size particles are removed during the compaction process.
- c. The surface of the top clay liner shall have all rocks which could be detrimental to the HDPE liner removed.

Please call if there are any questions.

Sincerely,

Utah Water Pollution Control Committee



Don A. Ostler, P.E.
Executive Secretary

CGD/ag

cc: Ms. Cindy Emmons, B.P. Minerals
Mr. L.J. Jacobsen, Barney's Canyon Gold Project
Mr. Kent Miner, Salt Lake City/County Health Department
Mr. Lowell Braxton, Division of Oil, Gas and Mining

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